



Air Resources Board



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R&P Model 2000 & 2025 PM_{2.5} Samplers April 2009

Issue

In order for a monitoring site to demonstrate the attainment/nonattainment status of the PM_{2.5} standard, an agency must have three years of complete data for that site. A year meets data completeness requirements are met when at least 75% of the scheduled sampling days for each quarter have valid data. Only creditable samples are counted when determining data completeness requirements. Creditable samples include valid samples collected on required sampling days and valid “make-up” samples taken for missed or invalidated samples on required sampling days. **Valid make-up samples are samples taken before the next required sampling day or exactly one week after the missed (or voided) sampling day. All other samples are considered extra and are not given credit for data completeness requirements.**

See 40 CFR 50 Appendix N for more information regarding PM_{2.5} make-up samples.

Symptom

Currently, when a scheduled PM_{2.5} sample day is missed or invalidated, a PM_{2.5} make-up sample has typically been collected some time before the end of the current month. Unless the make-up sample is collected before the next required sampling day or exactly one week after the missed (or voided) sampling day, that sample is considered an “extra” sample. This presents two problems when make-up samples are not collected in accordance with CFR requirements:

1. A site may not collect enough creditable samples during the quarter to meet the 75% data completion requirement and may not have enough data to make attainment decisions.
2. The extra samples can artificially raise the value of the 98th percentile, the daily value out of a year of PM_{2.5} monitoring data below which 98 percent of all data values fall.

The number of high data values that can be excluded when making the 98th percentile assignment if based exclusively on the number of creditable samples collected at the site. For example, if a site submits 130 valid samples to the U.S.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.

California Environmental Protection Agency

EPA's Air Quality System (AQS) for the year and all 130 samples are credible samples (valid scheduled or make-up samples), the 98th percentile value would be a third highest value measured at the site for the year. However, if the same site submits 130 valid samples to AQS for the year, but only 100 samples were creditable and the remaining 30 were extra samples, the 98th percentile would be the second highest value measured at the site for the year.

In both cases all data (creditable and extra) in the composite site record are used in annual mean and 98th percentile calculations, however, not all daily values are given credit towards data completeness requirements.

Solution

Site operators MUST adhere to the sampling requirements published in 40CFR50 Appendix N when scheduling make-up samples. Make-up samples, for missed or voided sampling days, must be taken before the next required sampling day or exactly one week after the missed sampling day. If a make-up sample can not be taken before the next required sampling day, or exactly one week after the missed sampling day, that sampling opportunity is lost and extra samples should not be taken.

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